

REMARKS

Claims 4 and 46 has been amended. New claims 59-66 have been added. Accordingly, claims 3, 4, 14, 15, 25, 26, 32, 46, 47, and 57-66 are presently pending in this application.

In light of the July 17, 2006, Office Action, the status of the claims is as follows:

A. Claims 3, 4, 14, 25, 32, 46 and 57 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,551,174 to Brown et al ("Brown"); and

B. Claims 15, 26, 47, and 58 were allowed.

A. Response to the Section 102(e) Rejections

Claim 32 was rejected under 35 U.S.C. § 102(e) as being anticipated Brown. As described below, the rejection of claim 32 should be withdrawn because Brown does not disclose or suggest all of the features of this claim.

(1) Claim 32 is Directed to Depositing a Flow of Planarizing Solution Onto a Contact Surface Through First and Second Elongated Slots

Claim 32 is directed toward a method of processing a microelectronic workpiece that includes removing material from the workpiece by pressing the workpiece against a contact surface of a processing pad and imparting relative motion between the workpiece and the contact surface. The method further includes depositing a first flow of a planarizing solution from a dispenser directly onto a first region of the contact surface. The method still further includes depositing a second flow of the planarizing solution from the dispenser directly onto a second region of the contact surface separate from the first region. The dispenser comprises a support, a first elongated slot along a first section of the support, and a second elongated slot along a second section of the support. Depositing the flow of the planarizing solution comprises discharging planarizing solution through the first and second slots at a common flow rate. The first slot discharges the first flow and the second slot discharges the second flow.

(2) Brown Discloses a Three Port Ball Valve With Two Positions

Brown discloses a slurry delivery system 200 constructed without a deadleg (5:21-25). The slurry delivery system 200 in Brown includes a ball valve 214 that is rotatable between a

first position and a second position (5:21-57). The ball valve 214 also includes a first port 228a connected to a supply line 212, a second port 228b connected to a return line 222, and a third port 228c connected to an exit port 226 (5:21-57). In the first position (shown in Figure 3B), the valve 214 is positioned to allow slurry to flow between the first port 228a and the third port 228c (5:21-57). The third port 228c is connected to the exit port 226, which dispenses slurry onto a polishing pad (5:21-57). In the second position (shown in Figure 3C), the ball valve 214 is positioned to allow slurry to flow between the first port 228a and the second port 228b (5:21-57). In the second position, slurry is returned to the slurry reservoir 202, thereby eliminating a deadleg where slurry can become stagnant (5:21-57). The undersigned found no reference in Brown to an elongated valve opening, a dispenser having an elongated opening, and/or a dispenser that dispenses an elongated flow of planarizing solution. In fact, Figure 6 of Brown shows an outlet 320 that appears to dispense a point or small circular flow of slurry as indicated by the configuration of the catch cup 322.

(3) Brown Fails to Disclose, Among Other Features, Depositing a Flow of Planarizing Solution Onto a Contact Surface Through First and Second Elongated Slots

Brown fails to teach or suggest the combination of elements set forth in claim 32. For example, Brown does not teach or suggest depositing a first flow of a planarizing solution from a dispenser directly onto a first region of the contact surface and a second flow of the planarizing solution from the dispenser directly onto a second region of the contact surface, wherein depositing the flow of the planarizing solution includes discharging planarizing solution through first and second elongated slots. Instead, Brown teaches a ball valve connected to an exit port that dispense slurry onto a processing pad and makes no mention of the exit port having an elongated slot. Accordingly, Brown does not teach or suggest depositing a flow of planarizing solution onto a contact surface through one or more elongated slots.

For at least these reasons, claim 32 is patentable over Brown. Claims 63 and 64 depend from claim 32 and, for at least this reason, claims 63 and 64 are also patentable over Brown. Independent claims 3, 4, 14, 25, 46, and 57 contain features generally similar to those of claim 32, and for at least this reason, these claims are also patentable over Brown. Claims 59, 60, 61,

62, 65, and 66 depend from claims 3, 4, 14, 25, 46, and 57, respectively. For at least this reason, these claims are also patentable over Brown.

(4) Independent Claim 25 is Patentable Over Brown for at Least the Additional Reason That It Also Includes an Elongated Valve Opening That is Aligned With the Elongated Distributor Opening When the Elongated Valve Opening is in the Open Position

Claim 25 is directed toward a planarizing machine that includes a table having a support surface, a processing pad on the support surface, a carrier assembly having a head configured to hold a microelectronic workpiece, and a drive assembly carrying the head. The planarizing machine further includes a solution dispenser having an elongated distributor opening along the fluid conduit through which a planarizing solution can flow and a valve having an elongated valve opening movable between an open position and a closed position. In the open position, the valve opening is aligned with the distributor opening so that planarizing solution can flow through the distributor opening. In the closed position, the valve opening is positioned away from the distributor opening so that planarizing solution cannot flow through the distributor opening.

Brown does not teach or suggest an elongated valve opening that is aligned with the elongated distributor opening when the elongated valve opening is in the open position. As discussed above, Brown does not teach or suggest a solution dispenser having an elongated distributor opening. Additionally, Brown makes no mention of a valve having an elongated opening. In Brown, a cross-sectional view of the ball valve is shown with a movable portion that alternately connects the first port to the second port or the first port to the third port. Brown makes no mention of a valve having an elongated opening that can be aligned with the elongated distributor opening. Accordingly, Brown does not teach or suggest an elongated valve opening that is aligned with the elongated distributor opening when the elongated valve opening is in the open position, as recited in claim 25.

For at least this additional reason, claim 25 is patentable over Brown. Claim 62 depends from claim 25 and, for at least this additional reason, claim 62 is also patentable over Brown. Claims 3, 14, 46, and 57 contain additional features generally similar to those of claim 25, and for at least this additional reason, these claims are also patentable over Brown. Claims 59, 61,

65, and 66 depend from claims 3, 14, 46, and 57, respectively. For at least this additional reason, these claims are also patentable over Brown.

(5) Independent Claim 3 is Patentable Over Brown for At Least the Further Reason That It Includes an Elongated Flow of Planarizing Solution From the Solution Dispenser

Claim 3 is directed toward a planarizing machine that includes a table having a support surface, a processing pad on the support surface, a carrier assembly having a head configured to hold a microelectronic workpiece, and a drive assembly carrying the head relative to the support surface. The planarizing machine further includes a solution dispenser separate from the head. The solution dispenser is configured to discharge a planarizing solution onto a plurality of locations on the pad. The solution dispenser includes an elongated support over the pad at a location spaced apart from a travel path of the head, a fluid passageway carried by the support through which a planarizing solution can flow, and an elongated distributor slot along at least a portion of the support. The planarizing machine still further includes a valve having an elongated valve slot movable between an open position and a closed position. In the open position, the valve slot is aligned with the distributor slot so that the distributor slot is in fluid communication with the fluid passageway to create an elongated flow of planarizing solution. In the closed position, the valve slot is positioned away from the distributor slot so that planarizing solution cannot flow through the distributor slot.

Brown does not teach or suggest an elongated valve slot that is aligned with the elongated distributor slot of a solution dispenser to create an elongated flow of planarizing solution when the elongated valve opening is in the open position. As discussed above, Brown does not teach or suggest a solution dispenser having an elongated distributor slot or a valve having an elongated valve slot that can be aligned with the elongated distributor slot. Additionally, Brown makes no mention of an elongated flow. In Brown, the ball valve can connect the first port of the valve to the third port of the valve, allowing slurry to flow into the exit port. The exit port can then dispense the slurry onto the polishing pad. Brown makes no mention of an elongated flow from the exit port and appears to teach a point or small circular slurry flow from the exit port. Accordingly, Brown does not teach or suggest an elongated valve slot that is aligned with the

elongated distributor slot of a solution dispenser to create an elongated flow of planarizing solution when the elongated valve opening is in the open position, as recited in claim 3.

For at least this additional reason, claim 3 is patentable over Brown. Claim 59 depends from claim 3 and, for at least this additional reason claim 59 is also patentable over Brown. Independent claims 14, 46, and 57 contain additional features generally similar to those of claim 3, and for at least this additional reason these claims are also patentable over Brown. Claims 61, 65, and 66 depend from claims 14, 46, and 57, respectively. For at least this additional reason, these claims are also patentable over Brown.

B. Indication of Allowable Subject Matter

The undersigned wishes to thank the Examiner for indicating that claims 15, 26, 47, and 58 are allowable. Although the applicants' attorney agrees with the Examiner's conclusion that claims 15, 26, 47 and 58 are allowable, the applicant's attorney notes that the claims may be allowable for reasons other than those identified by the Examiner and does not concede that the Examiner's characterization of the terms of the claims and/or the prior art are correct.

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the applied art. The applicant accordingly requests reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-6477.

The Commissioner is hereby authorized and requested to charge any deficiency in fees herein to Deposit Account No. 50-0665.

Respectfully submitted,
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